

REMARKS

I. Status of the Claims

Claims 15-69 are pending in the application. Of those claims, claims 61-69 have been withdrawn from further consideration as being directed to non-elected subject matter. Office Action at 2. Thus, claims 15-60 have been examined on the merits. By this Amendment After Final, claims 15, 28, and 41 have been amended. Support for these amendments can be found throughout the originally-filed specification, for example at p. 11, lines 25-30, and therefore, no new matter has been added.

II. Rejections of Independent Claim 15 under 35 U.S.C. § 103(a)

In the final Office Action, claims 15-43, 47-58, and 60 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over International Publication No. WO 00/66510 to Lyons et al. ("Lyons"). Office Action at 3. Further, claims 15, 30-37, 39-41, 44-46, and 51-60 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,833,747 to Bleakley et al. ("Bleakley") in combination with International Publication No. WO 02/16511 to Johns et al. ("Johns"). Id. at 5. Of the claims included in those claim rejections, claim 15 is the only independent claim. Applicant respectfully traverses the rejections of independent claim 15 under 35 U.S.C. § 103(a) based on either Lyons alone, or on Bleakley in combination with Johns, because those references, regardless of whether they are viewed individually or as a whole, fail to render independent claim 15 *prima facie* obvious for at least the reasons outlined in more detail herein.

A. Claim Rejection under § 103(a) based on Lyons

Applicant's independent claim 15 was rejected under 35 U.S.C. § 103(a) based on Lyons. The previous Office Action issued July 21, 2008 ("the previous Office Action") asserted that Lyons discloses "overlapping ranges." Previous Office Action at 3. The rejection statement in the final Office Action expands on this assertion by further asserting that "'About' permits some tolerance." Final Office Action at 3. Further, the final Office Action implies that Lyons does not teach away from the subject matter recited in the claims of the instant application. See id.

Applicant respectfully traverses the claim rejection under § 103(a) based on Lyons because Lyons fails to render the subject matter recited in independent claim 15 *prima facie* obvious. In particular, amended independent claim 15 is not *prima facie* obvious based on Lyons at least because (1) Lyons does not disclose or render obvious a kaolin clay with a shape factor greater than 25, and (2) Lyons teaches away from modification of its disclosed compositions in the manner proposed in the rejection statement.

Under 35 U.S.C. § 103(a), several basic factual inquiries must be made in order to evaluate whether a patent claim is obvious. According to the M.P.E.P., obviousness is a question of law based on these factual inquiries. § 2141(II) (citing KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 82 U.S.P.Q.2d (BNA) 1385 (2007), and relying on the framework established by Graham v. John Deere Co., 383 U.S. 1, 17, 148 U.S.P.Q. (BNA) 459, 467 (1966)). In particular, the Graham factual inquiries create a four-part framework for evaluating whether a patent claim is obvious. Graham, 383 U.S. at 17. Those factual inquiries are as follows:

- (A) Determine the scope and contents of the prior art;
- (B) Ascertain the differences between the prior art and the claims at issue;
- (C) Resolve the level of ordinary skill in the pertinent art; and
- (D) Evaluate evidence of secondary considerations.

Id. Following the guidance of the U.S. Supreme Court, the M.P.E.P. advises that the question of obviousness must be resolved on the basis of these factual determinations. § 2141(II).

The M.P.E.P. also provides guidelines for making these factual determinations. For example, the M.P.E.P. cautions that in order to avoid impermissible hindsight reasoning, these factual determinations must be made with respect to “the time the invention was made.” § 2141.01(III). Moreover, the M.P.E.P. cautions that when “determining the differences between the prior art and the claims, the question [of obviousness] is not whether the differences themselves would have been obvious, but [rather, it is] whether the claimed invention as a whole would have been obvious.” § 2141.02(I). Indeed, when considering the prior art, [a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” § 2143.03(VI) (second emphasis added).

Once the Graham factual inquiries have been resolved, it must be determined whether a claim is *prima facie* obvious. § 2141(III). Following the guidance of the above-outlined framework, the M.P.E.P. cautions that in order to establish a *prima facie* case of obviousness, “the examiner must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made.” § 2142. Further, “the examiner must then make

a determination whether the claimed invention 'as a whole' would have been obvious at that time to that person," and further, that "[k]nowledge of applicant's disclosure must be put aside in reaching this determination" because "impermissible hindsight must be avoided and a legal conclusion must be reached on the basis of the facts gleaned from the prior art"; not on the basis of Applicants' disclosure. Id.

Based on this guidance, the M.P.E.P. advises "[i]f a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." § 2143.01(VI). In other words, if the prior art teaches away from a proposed modification, then the prior art does not render a claim *prima facie* obvious.

Returning to the rejection of independent claim 15 under § 103(a) based on Lyons, Lyons does not render that claim *prima facie* obvious when viewed in light of the guidance of the M.P.E.P. While not necessarily agreeing with the Office Action's assertion that the recitation of "[a]bout" results in overlapping ranges between Lyons and the shape factor recited in independent claim 15, Applicant has amended independent claim 15, such that it recites "a kaolin clay with a shape factor greater than 25," rather than "a shape factor greater than or equal to about 25" Because Lyons discloses a "blocky kaolin" known to have shape factors less than 25, Lyons fails to expressly disclose kaolin having a shape factor greater than 25, as now recited in independent claim 15. For at least this reason, Lyons does not render independent

claim 15 *prima facie* obvious based on the rejection statement's asserted "overlapping ranges" theory.

In addition to not expressly disclosing a shape factor within the range recited in independent 15, Lyons teaches away from a shape factor in the recited range of greater than 25. The Office Action states "that a reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings." Final Office Action at 3. Applicant agrees. Lyons expressly distinguishes its own disclosure from disclosures relating to platey kaolin clays, and thus, one of ordinary skill in the art might reasonably infer from the express teachings of Lyons that it would not be desirable to use a platey kaolin instead of the blocky kaolin expressly taught by Lyons. Specifically, in distinguishing its disclosure from the prior art, Lyons expressly states that "blocky rather than a platey kaolin clay unexpectedly produces a combination of sheet brightness and gloss which is better than that reported in [the] prior art [, which discloses platey kaolin]" Lyons at p. 4 (emphasis added). Thus, viewing Lyons as a whole, as is required for a proper obviousness analysis, a skilled artisan would understand that Lyons teaches away from substituting relatively higher shape factor-"platey" kaolin clays for its disclosed, lower shape factor-"blocky" kaolin clays. Thus, it cannot be reasonably said that Lyons as a whole teaches or renders obvious the subject matter recited in independent claim 15. For at least this additional reason, independent claim 15's recitation of shape factors greater than 25 is not *prima facie* obvious based on Lyons.

For at least the reasons outlined above, Applicant respectfully submits that independent claim 15 is not *prima facie* obvious based on Lyons. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent claim 15 under § 103(a) based on Lyons.

B. Claim Rejection under § 103(a) based on Bleakley and Johns

Independent claim 15 was also rejected under 35 U.S.C. § 103(a) based on Bleakley in combination with Johns. Final Office Action at 3. In particular, the rejection statement asserts that Bleakley "discloses a composition comprising a PCC (aragonite) composition and a kaolin (encompasses kaolinite) composition, where the PCC has [the] defined sizes," and the "[k]aolin composition has an aspect ratio of larger than 30" and is platey kaolin. Id. at 3-4. The final Office Action further asserts that both Bleakley and Johns are directed to kaolin products and that Johns discloses the benefits of "the defined values of steepness factor and shape factor." Id. at 4.

Applicant respectfully traverses the § 103(a) rejection of independent claim 15 based on the rejection statement's hypothetical combination of Bleakley and Johns at least because Bleakley, in contrast to the rejection statement's assertion, does not disclose kaolin having a shape factor larger than 30. Further, the final Office Action's assertion that the "shape factor is the aspect ratio" is unfounded. See Final Office Action at 4.

First, it should be noted that shape factor and aspect ratio are not equivalent. Second, it is well known in the art that shape factor and aspect ratio are measured

differently, and there are no known mathematical correlations between the two variables.

As provided in Bleakley, aspect ratio is the ratio of diameter of a circular platelet of equivalent area to average platelet thickness. See Bleakley at col. 6, lines 61-62. A skilled artisan understands that in order to measure aspect ratio, individual particles are visually measured using electron microscopy (SEM). A number of images may be measured (e.g., 50), and then the average is calculated.

"Shape factor," on the other hand, is defined in the present application as a measure of an average value (on a weight average basis) of the ratio of mean particle diameter to particle thickness for a population of particles of varying size and shape, where the "mean particle diameter" is the diameter of a circle which has the same area as the largest face of the particle. See present application at p. 11, lines 10-24. Stated differently, the shape factor is the diameter of the circle of area equivalent to that of a face of the particle divided by the mean thickness of that particle (for example, as described in U.S. Patent No. 5,576,617). Moreover, an entirely different bulk measuring technique is used to determine shape factor. As disclosed in the present specification, shape factor may be measured using an electrical conductivity method rather than electron microscopy. See specification at p. 11, lines 14-16. In short, the measurement of shape factor may be performed by:

- (a) obtaining a fully-deflocculated suspension of the particles;
- (b) causing the particles in the suspension to orientate generally in one direction;
- (c) measuring the conductivity of the suspension in that direction;

- (d) simultaneously measuring the conductivity of the suspension in a direction transverse to that direction; and
- (e) using the difference in the two conductivity measurements as a measure of the shape factor of the particles in suspension.

Accordingly, the values derived from these two wholly distinct measurement techniques are bound to differ, and no mathematical relationship between the two techniques is known. Applicant further submits that, while both Bleakley and the present application may recite "platey" kaolin clays, the present claims recite kaolin clays with defined ranges of shape factor and steepness, and Bleakley does not necessarily disclose those ranges.

For at least the reasons outlined above, Bleakley and Johns, regardless of whether they are viewed individually or as a whole, fail to render independent claim 15 *prima facie* obvious. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent claim 15 under § 103(a) based on Bleakley and Johns.

III. Claim Rejection under § 103(a) based on Lyons and Bleakley

Claims 44-46 and 59 were rejected under 35 U.S.C. § 103(a) based on Lyons in combination with Bleakley. Final Office Action at 2. Each of claims 44-46 and 59 depends from independent claim 15. Therefore, each of those dependent claims should be patentably distinguishable from Lyons for at least the same reasons as independent claim 15. Further, Bleakley fails to overcome the above-outlined deficiencies of the § 103(a) claim rejection based on Lyons alone. For at least these reasons, Applicant

respectfully requests reconsideration and withdrawal of the rejection of claims 44-46 and 59 under § 103(a) based on Lyons and Bleakley.

IV. Conclusion

For at least the reasons set forth above, Applicant respectfully submits that independent claim 15 should be allowable. Claims 16-60 depend from allowable independent claim 15. Thus, those dependent claims should be allowable for at least the same reasons as independent claim 15. Therefore, Applicant respectfully requests reexamination of the present application, reconsideration and withdrawal of the claim rejections, and allowance of all of claims 15-60.

If the Examiner believes that a telephone conversation might advance prosecution of this application, the Examiner is cordially invited to call Applicant's undersigned attorney at (404) 653-6559.

Applicant respectfully submits that the final Office Action contains a number of assertions concerning the related art and the claims. Regardless of whether those assertions are addressed specifically herein, Applicant respectfully declines to automatically subscribe to them.

Please grant any extensions of time required to enter this Amendment After Final and charge any additional required fees to our Deposit Account 06-0916.

Respectfully submitted,

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